NSCAS - Science
Table of Specifications

Grade 5

Inquiry, The Nature of Science, and Technology

Grade 5 Abilities to do Scientific Inquiry	**Highest DOK level tested**	**DOK 1**	**DOK 2**	**DOK 3**	**Item Total**
SC 5.1.1 Students will plan and conduct investigations that lead to the development of explanations.					**8-13**
SC 5.1.1.a Ask testable scientific questions	2				
SC 5.1.1.b Plan and conduct investigations and identify factors that have the potential to impact an investigation	3				
SC 5.1.1.c Select and use equipment correctly and accurately	1				
SC 5.1.1.d Make relevant observations and measurements	2				
SC 5.1.1.e Collect and organize data	2				
SC 5.1.1.f Develop a reasonable explanation based on collected data	3				
SC 5.1.1.g Share information, procedures, and results with peers and/or adults	2				
SC 5.1.1.h Provide feedback on scientific investigations	3				
SC 5.1.1.i Use appropriate mathematics in all aspects of scientific inquiry	2				
Grade 5 Nature of Science	**Highest DOK level tested**	**DOK 1**	**DOK 2**	**DOK 3**	**Item Total**
SC 5.1.2 Students will describe how scientists go about their work.	**Assessed at the local level**				
SC 5.1.2.a Recognize that scientific explanations are based on evidence and scientific knowledge					
SC 5.1.2.b Recognize that new discoveries are always being made which impact scientific knowledge					
SC 5.1.2.c Recognize many different people study science					
Grade 5 Technology	**Highest DOK level tested**	**DOK 1**	**DOK 2**	**DOK 3**	**Item Total**
SC 5.1.3 Students will solve a simple design problem.	**Assessed at the local level**				

SC 5.1.3.a Identify a simple problem					
SC 5.1.3.b Propose a solution to a simple problem					
SC 5.1.3.c Implement the proposed solution					
SC 5.1.3.d Evaluate the implementation					
SC 5.1.3.e Communicate the problem, design, and solution					
PHYSICAL SCIENCE					
Grade 5 Matter	**Highest DOK level tested**	**DOK 1**	**DOK 2**	**DOK 3**	**Item Total**
SC 5.2.1 Students will explore and describe the physical properties of matter and its changes.					**3-6**
SC 5.2.1.a Identify mixtures and pure substances	1				
SC 5.2.1.b Identify physical properties of matter (color, odor, elasticity, weight, volume)	1				
SC 5.2.1.c Use appropriate metric measurements to describe physical properties	1				
SC 5.2.1.d Identify state change caused by heating and cooling solids, liquids, and gasses	1				
Grade 5 Force and Motion	**Highest DOK level tested**	**DOK 1**	**DOK 2**	**DOK 3**	**Item Total**
SC 5.2.2 Students will identify the influence of forces on motion.					**3-5**
SC 5.2.2.a Describe motion by tracing and measuring an object's position over a period of time (speed)	2				
SC 5.2.2.b Describe changes in motion due to outside forces (push, pull, gravity)	1				
SC 5.2.2 c Describe magnetic behavior in terms of attraction and repulsion	1				
Grade 5 Energy	**Highest DOK level tested**	**DOK 1**	**DOK 2**	**DOK 3**	**Item Total**
SC 5.2.3 Students will observe and identify signs of energy transfer.					**4-7**
SC 5.2.3.a Recognize that sound is produced from vibrating objects; the sound can be changed by changing the vibration	1				
SC 5.2.3.b Recognize that light travels in a straight line and can be reflected by an object (mirror)	1				
SC 5.2.3.c Recognize that light can travel through certain materials and not others (transparent, translucent, opaque)	1				

SC 5.2.3.d Identify ways to generate heat (friction, burning, incandescent light bulb)	1				
SC 5.2.3.e Identify materials that act as thermal conductors or insulators	1				
SC 5.2.3.f Recognize that the transfer of electricity in an electrical circuit requires a closed loop	1				
LIFE SCIENCE					
Grade 5 Structure and Function of Living Systems	**Highest DOK level tested**	**DOK 1**	**DOK 2**	**DOK 3**	**Item Total**
SC 5.3.1 Students will investigate and compare the characteristics of living things.					**2-4**
SC 5.3.1.a Compare and contrast characteristics of living and nonliving things	2				
SC 5.3.1.b Identify how parts of plants and animals function to meet basic needs (e.g., leg of an insect helps an insect move, root of a plant helps the plant obtain water)	1				
Grade 5 Heredity	**Highest DOK level tested**	**DOK 1**	**DOK 2**	**DOK 3**	**Item Total**
SC 5.3.2 Students will identify variations of inherited characteristics and life cycles.					**2-4**
SC 5.3.2.a Identify inherited characteristics of plants and animals	1				
SC 5.3.2.b Identify the life cycle of an organism	1				
Grade 5 Flow of Matter and Energy in Ecosystems	**Highest DOK level tested**	**DOK 1**	**DOK 2**	**DOK 3**	**Item Total**
SC 5.3.3 Students will describe relationships within an ecosystem.					**4-7**
SC 5.3.3.a Diagram and explain a simple food chain beginning with the Sun	2				
SC 5.3.3.b Identify the role of producers, consumers, and decomposers in an ecosystem	1				
SC 5.3.3.c Recognize the living and nonliving factors that impact the survival of organisms in an ecosystem	1				
SC 5.3.3.d Recognize all organisms cause changes, some beneficial and some detrimental, in the environment where they live	1				
Grade 5 Biodiversity	**Highest DOK level tested**	**DOK 1**	**DOK 2**	**DOK 3**	**Item Total**
SC 5.3.4 Students will describe changes in organisms over time.					**1-2**

SC 5.3.4.a Describe adaptations made by plants or animals to survive environmental changes	1				
EARTH AND SPACE SCIENCE					
Grade 5 Earth in Space	**Highest DOK level tested**	**DOK 1**	**DOK 2**	**DOK 3**	**Item Total**
SC 5.4.1 Students will observe and describe characteristics, patterns, and changes in the sky.					**1-2**
SC 5.4.1.a Recognize that the observed shape of the Moon changes from day to day during a one month period	1				
SC 5.4.1.b Recognize the motion of objects in the sky (the Sun, the Moon, stars) change over time in recognizable patterns	1				
Grade 5 Earth Structures and Processes	**Highest DOK level tested**	**DOK 1**	**DOK 2**	**DOK 3**	**Item Total**
SC 5.4.2 Students will observe and describe Earth's materials, structure, and processes.					**4-6**
SC 5.4.2.a Describe the characteristics of rocks, minerals, soil, water, and the atmosphere	1				
SC 5.4.2.b Identify weathering, erosion, and deposition as processes that build up or break down Earth's surface	1				
SC 5.4.2.c Identify how Earth materials are used (fuels, building materials, sustaining plant life)	1				
Grade 5 Energy in Earth's Systems	**Highest DOK level tested**	**DOK 1**	**DOK 2**	**DOK 3**	**Item Total**
SC 5.4.3 Students will observe and describe the effects of energy changes on Earth.					**3-5**
SC 5.4.3.a Describe the Sun's warming effect on the land and water	1				
SC 5.4.3.b Observe, measure, and record changes in weather (temperature, wind direction and speed, precipitation)	2				
SC 5.4.3.c Recognize the difference between weather, climate, and seasons	1				
Grade 5 Earth's History	**Highest DOK level tested**	**DOK 1**	**DOK 2**	**DOK 3**	**Item Total**
SC 5.4.4 Students will describe changes in Earth.					**1-3**

SC 5.4.4.a Describe how slow processes (erosion, weathering, deposition) and rapid processes (landslides, volcanic eruptions, earthquakes) change Earth's surface	1				